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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,844	01/18/2000	Hassan Y. Elnagar	SU-7152	1182

7590

02/26/2003

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EXAMINER

STOCKTON, LAURA

ART UNIT	PAPER NUMBER
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1626

DATE MAILED: 02/26/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.



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DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

## OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on November 18, 2002☒ This action is FINAL.☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), ~~which is longer~~, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

- ☒ Claim(s) 2-12, 14-28, 31, 33-38, 41-54, 57-60, 62-98, 101-118 and 120-133 are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
☐ Claim(s) \_\_\_\_\_ is/are allowed.  
☒ Claim(s) 2-12, 14-28, 31, 33-38, 41-54, 57-60, 62-98, 101-118 and 120-133 are rejected.  
☐ Claim(s) \_\_\_\_\_ is/are objected to.  
☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.  
☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.  
☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.  
☐ The specification is objected to by the Examiner.  
☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.  
☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_  
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- ☐ Notice of Reference Cited, PTO-892  
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_  
☐ Interview Summary, PTO-413  
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948  
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

09/484,844

## DETAILED ACTION

Claims 2-12, 14-28, 31, 33-38, 41-54, 57-60, 62-98, 101-118  
and 120-133 are pending in the application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the  
basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-12, 14-28, 31, 33-38, 41-54, 57-60, 62-98, 101-118 and  
120-133 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
Rogers {U.S. Pat. 2,392,505}, Rogers {U.S. Pat. 2,398,598}, Paterson  
{U.S. Pat. 2,779,764}, Paterson {U.S. Pat. 3,147,259}, Wolf et al. {U.S.  
Pat. 2,920,997}, Waugh et al. {U.S. Pat. 3,121,715}, Cole {U.S. Pat.  
4,621,096}, Girard et al. {U.S. Pat. 4,560,766}, Girard et al. {U.S. Pat.  
4,654,424}, Puzig {U.S. Pat. 4,677,130}, Lee et al. {U.S. Pat.

4,745,189}, Bhattacharya {WO 97/43264} and Jolles {"General Methods of Bromination", Bromine and its Compounds, 1966, Ernest Benn, London, page 365}, each taken alone or in combination with each other.

*Determination of the scope and content of the prior art (MPEP §2141.01)*

Applicants claim a process for the production of 1,3-dibromo-5,5-dimethylhydantoin which process comprises concurrently, or substantially concurrently, feeding to a reaction zone an aqueous solution or slurry formed from an inorganic base (e.g., sodium hydroxide), 5,5-dimethylhydantoin and a brominating agent.

Each of the above cited prior art teach a process of producing substituted hydantoin compounds by reacting such a compound with a halogenating agent (e.g., bromine) in the presence of an inorganic base (e.g., sodium hydroxide or sodium bicarbonate) and water.

Rogers '505 teaches a process wherein a disubstituted hydantoin is reacted with chlorine and other halogen in an aqueous medium while maintaining the reaction mixture in an alkaline condition (page 1,

column 2, lines 6-60; page 2, column 1, lines 1-8; Examples 1-4 on page 2, column 2, lines 4-54).

Rogers '598 teaches a process of making 1,3-chloro-5-methyl-5-isobutyl hydantoin where 5-methyl-5-isobutyl-hydantoin is dissolved in an aqueous alkaline solution which solution is rendered alkaline by the use of any basic material, such as sodium hydroxide, and then gaseous chlorine is passed into the aqueous alkaline solution (page 2, column 2, lines 4-20; and page 2).

Paterson '764 teaches a process of making a N-bromo-N-chloro-5-substituted hydantoin wherein a 5-substituted hydantoin is mixed with water containing known amounts of an alkalizing agent, such as sodium hydroxide, and bromine is added to the mixture in a calculated amount while the rest of the imido-hydrogen is substituted by chlorine (column 2, lines 3-24; and Examples 1-4).

Paterson '259 teaches a process of making halogen carriers by treating an organic nitrogen compound (e.g. a hydantoin) under aqueous alkaline conditions with a bromine producing compound, such as

bromine, and passing chlorine into the resultant mixture to produce the desired N-bromo compound (column 2, lines 36-58; column 3, lines 40-43; and Example 8 in column 6).

Wolf et al. '997 teach a process of making halogen substituted hydantoins by processes disclosed in Examples I and II (column 2).

Waugh et al. '715 teach a process of making N-brominated organic compounds (e.g. a hydantoin) by reacting bromine with a N-hydrogen organic compound in an alkaline or basic solution and in the presence of a chloro agent (column 2, lines 1-41; and Examples 1-16).

Cole '096 teaches a process of making a dihalogenated dimethylhydantoin by reaction of dimethylhydantoin and the corresponding source of halogen in water. The halogenation step is carried out in the presence of base (e.g. sodium hydroxide) to neutralize the acid formed in the halogenation step. The inorganic source of  $\text{-OH}$  and the halogenating agent are added concurrently at such a rate that the pH is maintained in the range of about 6.8-7.0 (column 2, lines 43-57; and Examples I-IV).

Girard et al. '766 teach a process of making 1,3-dichloro-5,5-diethylhydantoin by chlorinating diethylhydantoin (obtained from the reaction of 3-pentanone, potassium cyanide and ammonium carbonate) with chlorine gas at a controlled pH of 7.15 to 7.5 using a solution of sodium hydroxide (Example Six, column 6, lines 63-68 and column 7, lines 1-8).

Girard et al. '424 teach a process of making a halogenated hydantoin product which comprises halogenating under controlled pH conditions of from 6.0 to about 8.0 using a base such as sodium hydroxide (column 3, lines 1-47; column 4, lines 65-68; and Example Three in column 5).

Puzig '130 teaches a process of making 1-bromo-3-chloro-5,5-dimethylhydantoin by the process of Example 1 in column 6.

Lee et al. '189 teach a process of preparing N-halogenated organic heterocyclic compounds (e.g., a hydantoin) which have sufficient particle size by treating 5-substituted hydantoin in an aqueous mixture under

alkaline conditions and in the presence of a halogenated organic compound (column 5, lines 3-12; and Examples I to IV).

Bhattacharya {WO 97/43264} teaches a process of preparing a mixed 1,3-dihalo-5,5-dialkyl-hydantoin by treating a 5-methyl-5-propyhydandoin in water in the presence of NaOH with bromine and then chlorinating the resulting mixture (page 9, lines 8-21; and Example 7 on page 13).

Jolles teaches a process of making 1,3-dibromo-5,5-dimethylhydantion by dissolving 5,5-dimethyl-hydantoin and sodium carbonate in water and adding bromine.

*Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)*

The difference between the prior art and the instant claims is that the instant invention requires that the reactants/starting materials be added concurrently, or substantially concurrently into a reaction zone.



*Finding of prima facie obviousness--rational and motivation (MPEP §2142-2413)*

It is obvious to add in ingredients simultaneously which were previously added sequentially. In re Tatincloux, 108 USPQ 125. Further, since all of the above cited prior art teach similar processes of making N-halogenation compounds, the combination of the prior art references would also teach the instant claimed invention.

One skilled in the art would thus be motivated to utilize the processes taught by the above cited prior art to arrive at the instant claimed invention with the expectation of obtaining a N-halogenation compound which would be useful as, for example, a fungicide. Therefore, the instant claimed process would have been suggested to one skilled in the art.

*Response to Arguments*

Applicants' arguments filed November 18, 2002 have been fully considered. Applicants argue that the present invention calls for concurrently, or substantially concurrently, feeding to a reaction zone the

specified components. Applicants state that it is pointed out in In re Tatincloux et al. that no invention is involved in a broad concept of performing simultaneously operations that have previously been performed in sequence unless unexpected beneficial results are obtained. Applicants argue that it is shown in the instant specification that unexpected and beneficial results are obtained (page 30 and Example 12 and the data in Table 8 on pages 42-43).

All of Applicants' arguments have been considered but have not been found persuasive. As stated above, it is obvious to add in ingredients simultaneously which were previously added sequentially. In re Tatincloux, 108 USPQ 125. In the instant specification on page 18, the disclosure states, "concurrent" does not exclude the possibilities of inconsequential interruptions taking place during the feeds." Additionally, the selection of particle size is not a patentable modification in the absence of unobvious results. In re Rose, 105 USPQ 237 (C.C.P.A. 1955). Page 30, Example 12 and the data in Table 8 of the instant specification has been again reviewed. However, the showing

in Table 8 is not sufficient to overcome the rejection because the products that are being compared to the instant claimed products were purchased from the Aldrich Chemical Company, Albemarle Corporation, etc. It is unknown how these purchased products were produced.

Applicant relying upon comparative showing to rebut *prima facie* case must compare his claimed invention with the closest prior art. In re Holladay, 199 USPQ 516, 1978.

Therefore, absent unexpected, unobvious and beneficial superior results of the instant claimed invention over the above cited prior art in a side-by-side showing, the instant claimed invention is obvious to one skilled in the art.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

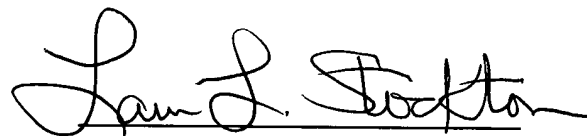
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of

this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura L. Stockton whose telephone number is (703) 308-1875. The examiner can normally be reached on Monday-Friday from 6:00 am to 2:30 pm. If the examiner is out of the Office, the examiner's supervisor, Joseph McKane, can be reached on (703) 308-4537.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.

The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

A handwritten signature in black ink, appearing to read "Laura L. Stockton". The signature is fluid and cursive, with the first name "Laura" and last name "Stockton" clearly distinguishable.

Laura L. Stockton, Ph.D.

Patent Examiner

Art Unit 1626, Group 1620

Technology Center 1600

February 24, 2003